Quality Assurance Project Plan (QAPP) for the Lower Manhattan Indoor Dust Test and Clean Program

Amendment 01 Edits and Corrections

September 9, 2008

PURPOSE:

The purpose of this amendment is to provide clarification to analytical requirements, minor corrections and updates to the Quality Assurance Project Plan (QAPP) for the Lower Manhattan Indoor Dust Test and Clean Program for analytical data collected and analyzed for activities associated with this program. The majority of these clarifications were documented in Kick-off Meeting Follow-up Q & A's document and disseminated June 27, 2007, to the contractors.

1. **Section 2.2 Laboratories**: Inserted f. Send raw data by email or CD-Rom.

2. **Section 2.4.2 SAT 2 Responsibilities, Paragraph 5:** Inserted "For the purposes of COPC source surveys, bulk samples will be collected from locations that are judged to be potential sources of asbestos. Bulk samples for asbestos analysis will be collected by placing suspect materials directly into ziplock bags. Bulk samples will be limited to friable, damaged, and/or exposed non friable suspect asbestos containing materials such as suspended ceiling tile and accumulated dust and debris. The sampling and analytical methods for bulk samples (asbestos/MMVF and lead) are specified in attachments 4B and 4C."

3. **Section 2.4.2 SAT 2 Responsibilities, Paragraph 6:** Deleted paragraph.

4. **Section 2.4.3.1 Lead, PAHs, MMVF, and Asbestos (Wipe, Microvac, Air and Bulk) Samples:** Inserted "Bulk" samples in the title and the analyses performed by EMSL.

5. **Section 2.4.3.2 Laboratory Turnaround Time:** Inserted **"**If there is a PCM exceedence confirmation by SEM, the result is also required within the original seven day turn-a-round time specified for asbestos."

6. **Section 2.5.4 Air Sampling Technicians:** Revised title and section to include bulk requirements.

7. **Section 4.1 Measurement Performance Criteria**: Replaced "duplicate" with co-located samples.

8. **Section 4.1 Measurement Performance Criteria Bullet # 7**: Replaced "duplicate and matrix spike/matrix spike duplicate (MS/MSD)" with 'co-located samples and blank spike/blank spike duplicate (BS/BSD)."

9. **Section 7.1 Sampling Process Design and Rationale, Paragraphs 6 and 7**: Replaced "The decision criteria for a HVAC cleanup use the 95% upper confidence limit (UCL) on a mean

contaminant level for accessible areas, infrequently accessed areas, or air samples in common areas. The UCL will be used in the decision process as follows: If the 95% UCL for the estimated building mean in common areas exceeds the benchmark value for a COPC, then this may be considered to provide support for the decision to offer to clean the building HVAC system. Separate analysis will be conducted for air samples, and accessible and infrequently accessed areas, and each will be compared with its own benchmarks. An exceedance of the 95% UCL for any benchmark in air or either set of accessible areas will be the basis for offering a HVAC cleanup.

The analytical results from both the air samples and the dust samples will be used to determine whether or not a cleaning will be offered to the occupant or owner of the unit or common area being tested. In general, a cleanup will be offered if a benchmark for any of the COPC is exceeded in a unit or building common area tested. EPA will conduct surveys to determine if the exceedance may be attributed to sources within or adjacent to the place of business or residence. If they are, this information will be considered in conjunction with information on building cleaning history to determine whether clearance sampling or further cleaning will be offered. In addition, asbestos, MMVF, and lead bulk samples may be collected as a result of a completed source survey as defined in Attachments 4B and 4C." with "The sampling results will provide data to form the basis for decision making on whether to offer a cleaning of the unit, common area and the HVAC in the building being sampled, and whether to conduct any additional sampling within a unit or common areas of a building. Where COPC exceeds benchmarks, a cleanup will be offered to the owner or occupants of those units or buildings. However, source attribution is a critical factor in determining whether to retest after cleaning and in some instances in deciding whether an EPA cleanup is useful. A source survey will be conducted where exceedances are found. In those instances where peeling or flaking lead paint was noted, EPA will suggest that the building management or apartment owners conduct remediations. If the exceedance is due to a source within the building or adjacent to the building, no further cleaning or re-sampling to demonstrate clearance will be offered.

The decision criteria for an apartment or individual common area are an exceedance of any individual benchmark. For buildings the 95% UCL on a mean contaminant level for accessible areas, infrequently accessed areas, or air samples in common areas will be evaluated. A UCL is a measure of uncertainty in an estimated mean due to sampling, measurement and other sources of variability in a set of data. The 95% UCL defines a value that will be exceeded by the true mean approximately 5% of the time in repeated sampling. The 95% UCL is commonly employed in EPA hazardous site assessments to provide a conservative upper bound estimate on the average site-wide contaminant level. The UCL will be used in the decision process as follows: If the 95% UCL for the estimated building mean in common areas exceeds the benchmark value for a COPC, then this may be considered to provide support for the decision to offer to clean the whole building. Separate analysis will be conducted for air samples, and accessible and infrequently accessed areas, and each will be compared with its own benchmarks. EPA will consider the source of contamination, the HVAC configurations and the distribution of contaminant in determining what building components to clean."

10. **Section 7.2 Sampling Procedures and Requirements, Paragraph 2:** Inserted "Lot blanks for wipe samples will consist of an unopened ghost wipe packet placed in an amber glass jar with a Teflon lid."

11. **Section 7.2.1 Sampling Collection Procedures, Paragraph 3:** Replaced **"**25 millimeter (mm) air sampling cassette, containing 0.8µ or smaller pore size MCE or PC filter." with "22 millimeter (mm) air sampling cassette, containing 0.45µ MCE filter."

Replaced the size of sampled area of 90 cm^2 with 100 cm^2

12. **Section 7.2.1 Sampling Collection Procedures, Paragraph 6:** Inserted new paragraph "Bulk samples for asbestos analysis will be collected by placing suspect materials directly into ziplock bags. For the purposes of COPC Source surveys, bulk samples will be collected from locations that are judged to be potential sources of asbestos. Bulk samples will be limited to friable, damaged, and/or exposed non friable suspect asbestos containing materials such as suspended ceiling tile and accumulated dust and debris."

13. **Section 7.2.1 Sampling Collection Procedures, Paragraph 7:** Inserted **"**Field co-located duplicates will be collected by placing a separate pump with a sampling cassette adjacent to the initial pump.

14. **Section 7.2.1 Sampling Collection Procedures, Paragraph 8:** Replaced **"**are wrapped in aluminum foil and then sealed inside a zip-lock bag." with "should be secured and handled so that they will not rattle during shipment nor be exposed to static electricity. Do not ship samples in expanded polystyrene peanuts, vermiculite, paper shreds, or excelsior. Wrap the cassette individually in a plastic sample bag. Each bag should be marked indicating sample identification number, total volume, and date. The wrapped sampling cassettes should be placed upright in a rigid container so that the cassette cap is on top and cassette base is on bottom. Use enough packing material to prevent jostling or damage."

15. **Section 8.0 Analytical Tasks:** Inserted two new paragraphs. "The analytical sensitivity required by for microvac analysis is 1000 structures (asbestos) or fibers (MMVF) per cm^2. ASTM 5775 section 16.8.1 states: An analytical sensitivity of approximately 1000 asbestos structures per square centimetre (calculated for the detection of a single asbestos structure) has been designed for this analysis. This sensitivity can be achieved by increasing the amount of liquid filtered, increasing the number of grid openings analyzed, increasing the area of the collection, or decreasing the size of the final filter. For example, using a collection area = 500 cm^2, filter area = 1000 mm^2, number of grid openings = 10, and a grid area of 0.01 mm^2, V = 50 mL, the analytical sensitivity is 40 str/cm^2. Occasionally, due to high particle loadings or high asbestos surface loading, this analytical sensitivity cannot be practically achieved and stopping rules apply.

If the stopping rules must be applied to a sample the laboratory shall document and report the steps taken per the method to achieve the required analytical sensitivity. For samples that do not meet the analytical sensitivity, EPA may request additional grid openings to be counted."

16. **Section 9.2.2 Sample Delivery, Paragraph 2:** Clarification was provided in the "Note" to specify that temperature blanks were included in the coolers shipped to the NEA Laboratory and not EMSL.

17. **Section 9.3 Sample Custody, Paragraph 2:** The last sentence was modified to reflect that the samples must be "within a locked facility."

18. **Section 10.1 Sampling and Analytical Quality Control Samples, Paragraph 3**: Replaced "field duplicate and one MS/MSD sample for each sampling technique at a ratio of 1 per 10 samples for each parameter." with "field co-located sample and one BS/BSD sample for each sampling technique at a ratio of 1 per day for lead and PAH parameters."

Deleted "Extra sample volume shall be submitted to allow the laboratory to perform matrix spike sample analysis."

Replaced "Field duplicate" with "Field co-located."

19. **Section 10.1 Sampling and Analytical Quality Control Samples, Paragraph 5**: Replaced "One lot blank (unopened media) shall be collected for each parameter each day." with "One lot blank (unopened media) shall be collected for each parameter once per week."

20.. **Section 11.2 Data Package Deliverables:** Included the retention of PCM slides.

21. **Section 14.0 FINAL PROJECT REPORT:** Deleted the detailed map specification "in a 24' x 36" format."

Tables

Table 1	Inserted Margaret Chong, 732-906-6904, Chong.margaret@epa.gov Replaced Ann Casey with Robert Wagner, bobw@nealab.com, Laboratory Director Corrected Shellee McGrath phone number to 702-895-8719
Table 2	Corrected PAH reporting limits to mg/m^2 Inserted new sample type for bulk. Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.
Table 3	Added "bulk" to the asbestos sampling technique Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.
Table 5	Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.

Table 6	Replaced the Sampling Technique and Method for Indoor Air samples with "NIOSH 7400 Modified 3600L Sample." Added new Type of Location row for "Potential Sources of Asbestos." Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.
Table 7	Replaced the PAH sample container with "Amber glass jars with Teflon lid." Inserted new Parameter row for Bulk. Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.
Table 8	Replace PAH Laboratory Reporting Limit with "0.25 or 0.06 mg/m^2 per individual compound as specified in the Laboratory SOW." Inserted a new Analyte row for asbestos bulk analysis. Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C. Added PAH benchmark footnote, PAH benchmarks will be compared to the calculated toxicity equivalency factor for each sample.
Table 9	Inserted a new Analytical Group for asbestos bulk and incorporated "SEM" instrumentation for MMVF-air. Deleted footnote * Bulk samples, if required for asbestos/MMVF and lead, will be analyzed as specified in Attachments 4B and 4C.